Message

From: EPAResearchCompass [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=C1E8F11508674C3C954553A1129D33E5-EPARESEARCH]
Sent: 8/1/2017 7:31:29 PM
To: ORD-ALL Feds and NonFeds and RSLs [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=2c735272eef941588aefd9a05ed28823-ORD-ALL Feds and NonFeds and RSLs]
CC: Lincoln, Larry [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8248d03a1441414db7754db201ebec45-Lincoln, Larry]; Barnett, Felicia [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=5773b45cae5142fe950861dd6146f1e9-Barnett, Felicia]; Carter, Bobbi [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=f16dcafe85fc418ebd1651be2e8ab82d-Carter, Bobbi]; Gettle, Jeaneanne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=d8e72aa7e1894faea44006fd9f22b637-Gettle, Jeaneanne]; Taylor, Dawn [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=b984d00ec06544e498ee5d986f97047c-Taylor, Dawn]; Klinger, Adam [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=346d5466632f4967adc7169c8d2ce4fd-Klinger, Adam]; Widener, Charles (Chuck) [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=db4c02702e5a4d25aabff1cf8bfa3e36-Widener, Ch]; Liljegren, Jennifer [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c7098a838cd34f75b8878571fe95d939-JLiljegr]
Subject: Weekly Compass: August 1, 2017

EPA

WEEKLY compass

Weekly Update: 8/1/2017

Welcome to the Weekly Compass, your gateway to information about recent and upcoming ORD activities. If you have ideas for the Weekly Compass, please send them to the editors. To see each full article on ORD@work, please click on the text that is hyperlinked.

Weekly Note from Bob

ORDers - Last week, as EPA's representative to the National Toxicology Program (NTP) Executive Committee, I presented an overview of EPA's PFAS activities at the biannual meeting. ORD's Lynn Flowers discussed ongoing efforts of the Cross-EPA PFAS Human Health Toxicity Workgroup. In addition to PFAS, the NTP is working on a number of efforts of interest to EPA

including mutagenic potential glyphosate and its formulations, low dose effects of bisphenol A as the CLARITY-BPA research program comes to an end, and tire crumb research.

ORD's acting Associate Assistant Administrator Mary Ellen Radzikowski and Small Business Innovation Research (SBIR) Program Manager April Richards participated in the Region 3 SBIR workshop on July 27. The workshop brought together local small businesses to learn about SBIR funding opportunities to support, develop, and commercialize their novel technologies. Successful small business efforts were highlighted that were started with the help of SBIR resources from different federal agencies including EPA.

Bruce Rodan, Richard Yamada, Jeff Frithsen (acting CSS National Program Director), and Rusty Thomas (NCCT Director) had a good visit to NHEERL's Mid-continent Ecology Division where they toured the lab and were provided with a well-presented overview of ongoing SSWR, SHC, and CSS research activities in Duluth.

This week I will join Greg Sayles (NHSRC Director) and others from our homeland security research program in Idaho to participate in a meeting of invited national water system experts who will provide independent viewpoints on our Water Security Test Bed (WSTB). I look forward to visiting this full-scale facility that replicates a typical municipal drinking water piping system and hearing from the experts about how we might best use the WSTB to protect our nation's water.
As we move into August, stay cool and keep up our important work. - *Bob Kavlock*

Quick Updates

- Don't forget to check out the open opportunities on Talent Hub!
- Reminder: FY 17 required training is available via e-Learning.
- Registration is open for the 14th Annual EPA Drinking Water Workshop: Small Systems Challenges and Solutions, August 22-24 in Cincinnati.
- Check out *EPA Research: Recent Impacts Report*
- View some helpful tips to ease the transition to Windows 10
- Online registration for training on enhancements to People Plus is open. Contact Jeris Bowlding with any questions.
- Voting is open through 9/15 for the People's Choice Award -- part of the Samuel J. Heyman Service to America Medals. There are 3 EPA employees in the running!
- You can read the This Week @ EPA newsletter here.
- Upcoming webinars:
    - Nutrient Sensor Action Challenge Informational Webinar: Wednesday, August 2, 2-3 pm ET
    - Internal SSWR Project Update Webinar: Improved Nutrient Indicator Development: Monday, August 7, 1-1:30 pm ET
    - Tips for Preparing Requisitions and Task Orders is EPA's Acquisition System (EAS): Thursday, August 10, 9:30 - 10:45 am ET
    - SERDP & ESTCP Webinar Series: Zinc Nickel Dip and Brush Plating: Thursday, August 17, 12 - 1:30 pm ET

Faces of ORD: NERL's Aabir Banerji

In the Lab:

Collaborative Publication on Identifying CyanoHABs in Inland Waterbodies Using Satellite Remote Sensing

EPA researchers co-authored a recent publication on the CyAN project (EPA, NOAA, USGS, and NASA) in *Harmful Algae*, A method for examining temporal changes in cyanobacterial harmful algal bloom spatial extent using satellite remote sensing, focuses on quantifying spatial extent of cyanoHABs in US lakes. This is the companion Ecological Indicators manuscript on the frequency reporting method for drinking and recreational waters.

Economic Tradeoffs of Pasture Rotation for Vermont Dairy Farmers

A new project recently launched by Region 1, Office of Water, and NHEERL's Stephen Balogh is assessing the tradeoffs and profitability for a system of pasture rotations for dairy cow grazing in Vermont. The project, called the Lake Champlain Dairy Farm Community Sustainability Project, is a collaboration formed to reduce excess phosphorous loading to the Lake Champlain watershed and thereby comply with Total Maximum Daily Loads. The project will forecast short- and long-term social and economic tradeoffs to small dairy farms in the Lake Champlain watershed undergoing transition to pasture-based operation. Rotational grazing, which can reduce nutrient loading, is an alternative method available for some dairy farm operations. The project includes collaborators from the several departments representing the State of Vermont, academic researchers at the University of Vermont and the Lake Champlain Basin Program.

Cape Fear PFAS Sampling Status Meeting

On July 26th, ORD hosted a conference call meeting of staff and management involved in the collection of water samples from the Cape Fear River Basin in North Carolina and their analyses for the PFAS, GenX. The meeting brought together project participants from ORD, Region 4, North Carolina Department of Environmental Quality, and North Carolina Department of Health and Human Services. Participants discussed the status of and future plans for the project.

TSCA Update

ORD met with OCSPP on Friday to discuss ORD efforts to support chemical prioritization under TSCA. Discussions included defining the working subset of TSCA chemicals that will be included in the prioritization exercise and demonstrating the types of physical-chemical, exposure and toxicological data available for those chemicals.

EPA's Report on the Environment Update

Three new updates to the online Report on the Environment (ROE) were recently released. The latest changes include: 1) three updated video guides to help navigate the website, 2) a new drinking water "Featured Indicator" on the homepage, and 3) updated data for 31 indicators. EPA's ROE — released in 2015 — is an interactive resource that shows how the conditions of the environment and human health in the United States are changing over time. Over 80 indicators, detailing the status or trend of various aspects of the nation's environment or human health, are organized into five themes—Air, Water, Land, Human Exposure and Health, and Ecological Condition. To explore the latest version of the ROE, visit http://www.epa.gov/roe.

NRMRL Lead Research Updates

NRMRL's Darren Lytle and Mike Schock have received a provisional patent for a lead exposure assessment device. This new device is very promising for measuring average lead concentrations at a drinking water tap in the home and reducing exposure to lead, a critical concern to the Agency and to water utilities and consumers across the country.
Also, NRMRL's Simoni Triantafyllidou and Mike Schock co-authored a journal article investigating the formation of lead phosphate scales on drinking water pipes in systems using blended phosphates for corrosion control. This research showcases the capabilities of EPA's Advanced Materials and Solids Analysis Research Core laboratory and concludes that sampling of drinking water is critical in order to evaluate community-specific drinking water lead risks. The pre-publication version is available.

Specialized Training for Office of Pesticide Programs on Thyroid Toxicology

On July 31, NHEERL scientists Mary Gilbert and Tammy Stoker, and NCCT's Kevin Crofton conducted a training session on 'Thyroid Toxicology' for OPP. Thyroid hormones are essential modulators of a wide variety of vertebrate physiological processes. Deficiencies in thyroid hormones, including chemical-induced deficiencies, are known to cause adverse effects in both the developing and adult organism. The lecture topics are tailored to improve the ability of EPA Program Office staff to evaluate data submissions.

Presentation on Case Studies of Tampa Bay, FL, and Tillamook Bay, OR, to Improve Water Quality and Benefit Communities

On August 3, scientists NHEERL and two featured National Estuary Programs (NEPs) will give a presentation describing how on-site data, maps, models, tools and formal ecological assessments are being used to project future conditions and benefits for coastal ecosystems. "Futures scenarios" are being used to inform stakeholder decisions that impact estuarine systems.

NRMRL Supports Region 8 in Remediation of Two Montana Superfund Sites

Last week, at the request of Region 8, NRMRL's Ed Barth attended meetings in Helena, MT on remediation activities at the BNSF Somers Seep site (Somers, MT), a former railway tie treating site where a land surface sheen was reported on the shoreline of Flathead Lake in May 2017, and the Idaho Pole Co. site (Bozeman, MT), a former wood treating facility with pentachlorophenol, PAHs and dioxins/furans contamination. Ed discussed various remediation technologies for augmenting natural attenuation of subsurface Dense Non-Aqueous Phase Liquid (DNAPL) plumes at these sites. Ed also met with Dr. Ellen Lauchnor of the Environmental Engineering Department at Montana State University to discuss their research in microbial-induced mineral coatings for mine tailing piles.

NRMRL Assisting Rural Communities in Puerto Rico with Small Drinking Water Systems

This week, Craig Patterson, along with EPA Region 2 and the Inter-American University of Puerto Rico (IAUPR), is evaluating drinking water treatment and monitoring technologies in small communities near Patillas, PR, for compliance with the Safe Drinking Water Act and contributions to improving public health. The collaborators will train community volunteers to be citizen scientists by demonstrating how to download monitoring results and analyze bacteria samples using an IDEXX instrument provided by Region 2. The project team will also evaluate two different configurations of biological sand filters for waterborne pathogen removal. This work is being conducted under a MOU between EPA and IAUPR and is associated with a Region 2 RARE Project.

National Water Experts Share Insights at Water Security Test Bed

On August 3, NHSRC is hosting a group of national water system experts to provide independent viewpoints on the concept, approach, implementation and sustainability of the Water Security Test Bed (WSTB). The WSTB, constructed at DOE's Idaho National Laboratory, is a full-scale facility that replicates a typical municipal drinking water piping system. The expert group includes Alan Roberson, Director at the Association of State Drinking Water Administrators, Lisa McFadden, Sr. Program Manager at the Water Environment Federation, Rob Renner, CEO of the Water Research Foundation, and others. The experts' insights will assist in planning the future use and capabilities of the WSTB including how best to expand its use as a national capability to support the nation's water sector. NHSRC researchers will also be conducting decontamination and other research activities at the WSTB from July 31-August 2.

NHSRC Researcher Participates in USDA/APHIS-sponsored Workshop on Rendering for Emergency Carcass Management

NHSRC engineer, Dr. Paul Lemieux, and OLEM/ORCR scientist, Ms. Anna Tschursin, participated in a workshop sponsored by the USDA Animal and Plant Health Inspection Service in collaboration with the National Renderers Association to discuss the use of Rendering for Emergency Carcass Management. Rendering is a process commonly used to transform dead animals into a saleable product (tallow and meat and bone meal) that can be used to produce consumer items such as pet food and cosmetics. NHSRC and USDA are interested rendering because it also has the capability to inactivate all viral and bacterial pathogens in carcasses. Rendering may be a means for disposal of contaminated animal carcasses resulting from a mass mortality event such as a foot and mouth disease outbreak among cattle or a Highly Pathogenic Avian Influenza outbreak among poultry. This workshop discussed potential hurdles to using rendering, such as the need to securely transport contaminated animal carcasses from an infected farm to a rendering plant, and how to disinfect the rendering plant to bring it back online for routine operation.

New Modeling Tool Makes Significant Advances in Ability to Identify Specific Drinking Water Disinfection Byproducts of Concern

Research has evaluated associations between exposure to chemically treated drinking water, which generally contain numerous disinfection byproducts (DBPs), and reproductive and developmental effects such as stillbirth, low birth weight, and pregnancy loss. Toxicologists have studied associations between some individual DBPs and these effects, but there are few studies of complex DBP mixtures. This is an area of significant interest to the Office of Water and drinking water providers across the states. A new regression-based modeling tool helps determine which individual chemicals and mixture sub-sets drive adverse health effects, by allowing understanding of their contributions to the toxicity of a complex mixture. This is a critical accomplishment for mixtures toxicology and risk assessment, adding an important tool to the cumulative risk toolbox. Results of this collaborative effort appear in a special issue of the Journal of Environmental Science devoted to DBPs. The ORD leadership team of Drs. Glenn Rice (NCEA), Mike Narotsky and Jane Ellen Simmons (NHEERL) enabled the development and application of the tool. Read more in *Method to Assess Component Contribution to Complex Mixture Toxicity: Assessment of Puberty Acquisition in Rats Exposed to Disinfection Byproducts*.

Paper on EPA's New Water Network Tool for Resilience (WNTR) Published in Environmental Modeling & Software

NRMRL's Regan Murray co-authored a journal article introducing EPA's new WNTR, an open source tool designed to help water utilities investigate the resilience of water distribution systems to hazards and evaluate resilience-enhancing actions. WNTR can model a wide range of

disaster scenarios, as well as repair and recovery strategies. The paper uses an earthquake case study to demonstrate the tool's capabilities. The pre-publication version is available.

OSP Regional Support

- On July 20, the Region 7 Superfund and Technology Liaison (STL), Rob Weber, participated in a meeting with Ed Barth and John McKernan from NRMRL to assist with planning a disposal area for soil containing residual mined metals, known as mine tailings, for the Madison County Mines Superfund Site in Fredericktown, MO. Mine tailings from the site are impacting a nearby lake that serves as a public water supply. ORD's assistance will help Region 7 and local officials identify a disposal location.
- On July 24, the Region 10 STL, Kira Lynch, led a team of ORD and regional staff to finalize a work plan on the design and implementation of a field study to evaluate the use of soil amendment technologies to remediate metals at the Upper Columbia River Superfund Site in Kettle Falls, WA. Field work is scheduled to begin August 14.
- On July 27, the Region 8 STL, Steve Dyment, is meeting with the Silverton Planning Commission and other stakeholders to discuss innovative technologies that ORD is evaluating for use at the Bonita Peak Mining District (BPMD) Superfund Site in San Juan County, CO. The site includes the Gold King Mine that spilled wastewater into local waterways in 2015. The meeting is part of a stakeholder-requested series of discussions that will inform the community about work being done in the BPMD.

ROCS-Net Spotlight: Region 5's Jenny Liljegren

Jenny Liljegren is a scientist in Region 5's Air Programs Branch, where she works on Clean Air Act state implementation planning and air quality modeling. At the ROCS-Net event, Jenny presented her regional science issue paper about the lake breeze effect, which can trap, stratify and recirculate urban pollution and expose Lake Michigan's coastal communities to high concentrations of ground-level ozone. When asked about her ROCS-Net experience, Jenny said that her ORD Mentors, Tom Pierce and Rohit Mahur, are encouraging her to engage in future collaborations with ORD and have helped her gather, "a whole list of [scientists]… whom I now feel comfortable contacting via phone or email with questions and ideas."

Pictured: Jenny Liljegren

Accolades:

HHS CDC/CMS Recognition of EPA's Contribution to Million Hearts

The ORD IOAA received a letter and certificate recognizing NHEERL's contribution to the Million Hearts initiative from 2012-2016. This collaboration with HHS CDC/CMS over the last few years has been substantial and ultimately resulted in CDC/CMS adopting a goal of increasing the awareness of the health effects of ambient air particle pollution among health care professionals and their at-risk patients into the new *Million Hearts 2022* program. Including new *Million Hearts* goals to reduce exposure to PM rests largely on ORD science or the science of its STAR grantees and will have a measurable benefit to public health and the wellbeing of Americans.

NHEERL Scientist Named NAS Workshop Reviewer

Tamara Tal of NHEERL's Integrated Systems Toxicology Division was recently appointed a member of the review team for the National Academies of Sciences workshop proceedings titled "Animal models for microbiome research: Advancing basic and translational science." The workshop took place under the auspices of the National Academies' Institute for Laboratory Animal Research (ILAR) Roundtable in December 2016. It was designed to examine animal models of microbiome research with an emphasis on improving the analysis of microbial communities, standardization, and infrastructure and tools for conducting studies in these types of models. The workshop addressed gaps, challenges, and opportunities in this rapidly expanding field. As with all the roundtable workshops, its proceedings have been authored by a science writer and staff and will be submitted for review through the National Academies' external review process. Dr. Tal will serve as one of two external reviewers on the report.

ORD Research Poster Recognized

The adverse outcome pathway (AOP) and aggregate exposure pathway (AEP) concepts can inform cumulative risk assessment by enabling joint consideration of multiple species during the problem formation stage. NHEERL's David Hines has developed a data integration and visualization strategy to assemble a diverse array of information using the AEP and AOP frameworks as a scaffold. The result is a comprehensive read-out of available data from both traditional and alternative toxicity assessment methods across all species for which toxicity information exists, coupled with a formal representation of the potential exposure routes for each chemical of interest. This information can then be used to identify data gaps, identify vulnerable or sensitive species, and enable easy comparison of all available toxicity data. Dr. Hines presented this work in the poster, "Integrating human health and ecological data into cumulative risk assessment through the Aggregate Exposure Pathway and Adverse Outcome Pathway frameworks," at the OpenTox USA meeting held at Duke University on July 12. Hines' poster was recognized as the best of the 22 posters presented. Co-authors on this poster include NHEERL's Rory Conolly and Stephen Edwards and NCEA's Annie Jarabek.

Smoke Sense App Is Now Live

EPA's Smoke Sense mobile application is now live and available for download on Android devices. Smoke Sense is a citizen science mobile app developed as part of a public health study. Smoke Sense will study the extent to which wildfire smoke exposure affects health and productivity, as well as health risk communication strategies that improve public health outcomes. The remainder of this smoke season will serve as a pilot of the app. While the app is available to the public, EPA is working with pilot communities to build a user base and collect feedback from the local level about Smoke Sense for the following smoke year. The iOS version is currently under development.

In The News:

Nutrient Sensor Action Challenge Announced

On July 26, EPA issued a national press release announcing the Nutrient Sensor Action Challenge. For Stage 1 of the Challenge, teams will submit action plans for effectively piloting and using information from new low-cost, continuous nutrient sensors in waterways. Up to ten winning teams will be selected and awarded cash prizes totaling $50,000. For Stage 2 of the Challenge, the winning teams from Stage 1 will deploy the sensors and collect data as they compete for a share of $100,000 in prizes. An informational webinar for the Challenge will be held tomorrow at 2pm ET.

EPA Research on CYAN Monitoring Featured in AP

NERL researcher Blake Schaeffer was recently interviewed by the *AP* for his work on Cyanobacteria Assessment Network (CyAN), an early warning system that can spot when algae begins showing up on hundreds of lakes across the U.S. The Cyanobacteria Assessment Network (CyAN) is a multi-agency project among the National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), U.S. Geological Survey (USGS), and EPA to develop an early warning indicator system using historical and current satellite data to detect algal blooms in U.S. freshwater systems. The story was also picked up by the *New York Times, ABC News*, *Centre Daily Times*, *The Washington Post* and *iHeart Radio*. Today, Blake also did an interview on the same topic for a morning Canadian radio show on *CKTB.*

Water Quality Dissertation Highlighted in Blog Post

NRMRL's Tingting Liu's PhD dissertation, "The Impact of Water Quality in Narragansett Bay on Housing Prices," examines the impact of water quality on housing prices in coastal towns and municipalities along the Narragansett Bay using a hedonic housing-price model. It was accepted by *Water Resources Journal.* Tingting was also interviewed by the American Geophysical Union for a blog post on this topic.

In the Office:

Elevator Speech Resource Page

In 60-seconds, can you tell a stranger what you do, why it matters and why they should care in a way that is engaging, meaningful and easy to understand? Speaking about complicated science in plain language is a challenge and a skill that many scientists and science communicators need to practice. At ORD, our mission as a public entity makes it all the more important. The public's ability to understand the importance of our work matters. The new Elevator Speech resource page will help you get started, sharpen your skills, or find the motivation you need to develop your own elevator speech. Check it out.

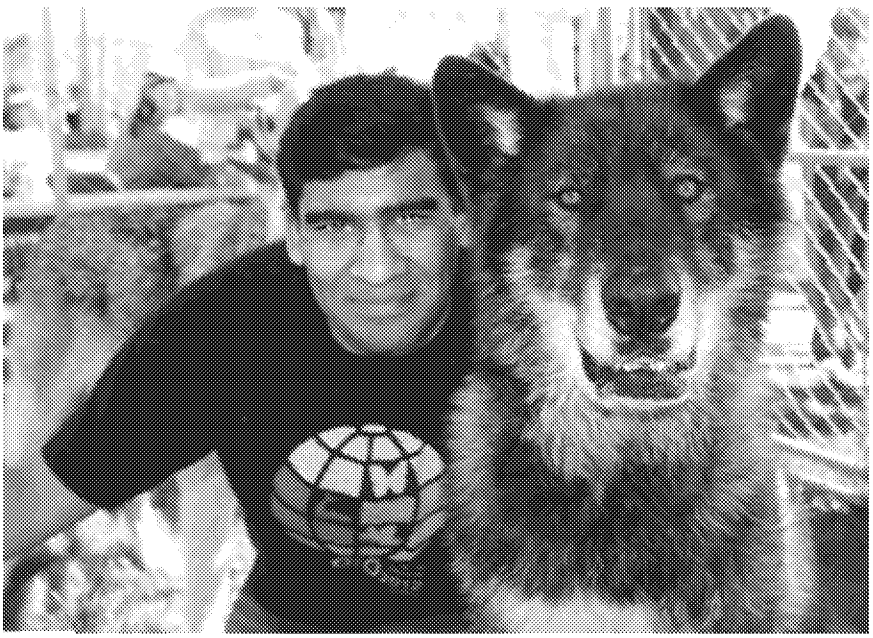
In the Community:

EPA-RTP STEM Outreach Program Events

- Tomorrow, EPA-RTP's STEM Outreach Program will present *Build Your Own PM Sensor* kits at the *Tweens and Technology Summer Camp* in Raleigh.
- On Friday, EPA-RTP's STEM Outreach Program will have a booth at the Conservation Trust for North Carolina's Job Fair at North Carolina State University.

On August 6th, six EPA-RTP employees will participate in the *Think Blue Festival*, a water-focused community outreach event at The Scrap Exchange Durham, N.C. The EPA booth will include hands-on activities and information to educate attendees about the importance of aquatic ecosystems and what they can do to help promote water sustainability in their homes and communities. The event is hosted by a graduate student at Duke's Nicholas School of the Environment in conjunction with the North Carolina Sea Grant and Water Resources Research Institute.

Faces of ORD: NERL's Aabir Banerji



Name: Aabir Banerji
Job/Position: Ecologist
L/C/O or Program: NERL/SED/ORD (in Cincinnati)

1. When did you start at EPA?
End of November, 2015 (about a year and a half ago).

2. What's the most interesting thing about your job?
Getting to interact with my colleagues (fellow scientists with differing backgrounds and expertise).

3. What's the most interesting thing in your workspace?
I would say it's my bookshelf, which has an entire section dedicated to books about wolves and another section that has atlases and textbooks including "THE ENCYCLOPÆDIA OF NEW AND REDISCOVERED ANIMALS" by Karl Shuker.

4. What's your favorite thing to do (besides come to work)?

Spend time outdoors, especially when there's a warm breeze and I'm with friends and family.

5. What's your favorite lunch spot?
La Mandi's deli (across the street from AWBERC). I'm a big fan of their chicken shawarma and french fries.

6. If you could have one superpower, what would it be?
For the purposes of work, I was tempted to write "the ability to herd cats" or "the ability to summon Captain Planet"… but I'll go with "the ability to photosynthesize," instead. I think being facultatively solar-powered would be pretty neat.

7. Seasonal question: Would you rather get stung by three bees or get a really bad sunburn?
Get a sunburn. I've never been stung by a bee, despite all the occasions where I probably should've been. Putting aside that (for all I know) I might be allergic to bee stings, I'd feel guilty if I were stung, on account of the bee having had to sacrifice its life to sting me.

8. Describe some steps you take in your daily life to protect the environment.
As a child of the 80s, I'm big on "pitching in," recycling, and cutting up plastic six-pack rings. I also avoid using pesticides (indoors or out) and products that contain microplastics.